U.S. Antarctic Marine Living Resources Program

2011-2012 Weekly Field Reports
Cape Shirreff, Livingston Island

Volume 11
January 23, 2012

Science Report

Seabirds

1. Median crèche for gentoo penguins occurred on 22 January. The failure rate of the gentoo reproductive study nests has remained the same since last week at 44%, while 28% are brooding chicks and 28% are crèched. In the chinstrap penguin reproductive study 55% of nests have chicks, 3% are crèched and 42% have failed.

2. The crèche has not yet begun for known-aged chinstrap penguins. Currently, 57% of the known-age chinstrap penguin nests have failed, and the remaining 43% are brooding chicks. This week the failure rate of known-aged gentoo penguin nests has remained the same at 44% and 28% have crèched.

3. We are continuing to weigh chinstrap and gentoo chicks of all reproductive study and known-aged breeder nests. The mass, taken when chicks are 21 days old, is used as a measure of chick condition before they crèche.

4. We continued diet sampling on chinstraps and gentoos this week. We followed adults returning from foraging trips back to their nests to verify that they were breeders and captured them before they feed their chicks. Samples were collected using the wet-offloading technique. Data on total mass of stomach contents, diet composition, and length and sex frequency of krill were recorded for each stomach sample.

5. Between 19 and 21 January, we recovered five time-depth recorders and eight satellite transmitters that had been deployed on adult gentoos and chinstraps. The data await analysis.

6. Most of the skuas are nearly done hatching. Currently, eight pairs have failed, seven pairs have one chick, one pair has two chicks, and two pairs are incubating eggs.

Pinnipeds

7. We now only have three remaining GPS/Time depth recorder females for monitoring foraging locations as well as diving. The other three have lost their pups and their TDRs have been removed. To date we have collected data on 33 foraging trips. All have completed at least five trips to sea; one had completed eight trips before losing her pup. Mean trip duration for these instrumented females is 4.36 days (s.d.=1.54; range: 1.29-6.71 days).

8. Twenty of our 30 CCAMLR attendance females have completed six trips to sea. To date four of our attendance females have lost their pups before completing six trips. Leopard seal numbers continue to increase and we expect to lose more pups in the coming weeks.

9. Trip durations continue to be longer than average for the fifteen years we have been monitoring. All 30 attendance study females completed at least three trips to sea before any lost their pups and 28 completed at least five. Trip durations are as follows: first trip: 3.20d (s.d.=2.09, n=30), second trip 3.99d (s.d.=2.19, n=30), third trip 4.26 d (s.d.=1.83, n=30), fourth trip 4.31d (s.d.=1.16, n=29), and fifth trip 4.40d (s.d.=1.22, n=28). The maximum trip duration remains at 9.56 days.

10. Sixteen of the pups of the 20 females that have completed six trips to sea have been weighed according to protocol. Mean mass gain from the start of female foraging cycles to completion of the sixth trip suckling bout is 90.1 g/d for females (s.d.=18.9; n=10; range: 65.0-122.9) and 107.8 g/d for males (s.d.=26.1; n=6; range: 73.5-137.5).

11. We continue to monitor our adult tagged female population and mother pup pairs to get a measure of reproductive success and loss of pups due to leopard seal predation. Pups are now actively playing and swimming off shore where they are easily accessible to leopard seals. Our current estimate for pup loss to leopard seal predation as of yesterday (22 January) is 31.2%.

12. We captured 15 fur seals this week for retrieval of archival instruments and deployment of over winter geolocation light sensors (GLS). We retrieved three time depth recorders from females that have lost their pups. Thus far we have deployed 52 of the planned 60 GLS fur seal over winter instruments for 2012.

13. This week we collected our fifth fur seal diet sample of ten scats. To date 50 scats have been collected.

14. On 20 January we completed our ninth weekly Cape-wide Phocid census. We counted 277 southern elephant seals, 23 Weddell seals, and 15 leopard seals.

15. Leopard seals continue to arrive and as of 22 January we have recorded 202 sightings of 28 tagged seals. We have recorded an additional 36 sightings of untagged or otherwise unidentified seals. Eighteen of the 28 tagged seals returned from previous years and the other nine we have tagged this year.

Weather

16. We have had uncharacteristically dry, sunny weather this week. Winds averaged 17.1 mph with a maximum wind speed of 47 mph. Once again westerlies dominated all week. Precipitation for the week was 0.11 inches bringing the season total to 2.75 inches. The average temperature was 2.97° C with a high of 7.8° C and a low of 0.9° C. Mean daily solar radiation was 17,282 Wm^2. Sunrise is now at 4:04 am and sunset is at 10:13 pm.

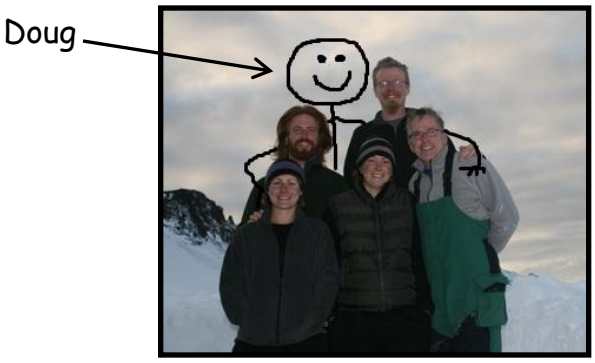
Camp

17. On 19 January the human population of the Cape increased by five. Seven new people arrived (six in the Chilean camp and one in the American camp). Two of the three Chileans that arrived on 8 January left. The current population is 13 people, seven in the Chilean camp and six in the American camp. All transfer of personnel, gear and cargo was accomplished courtesy of the Chilean Navy using two helicopters.

18. We welcomed Douglas Krause on to the U.S. AMLR field team. Doug is a graduate student of Scripps Institute of Oceanography, University of California and is studying leopard seals.

19. We received a much anticipated small resupply of fresh fruit and vegetables. Everyone on the crew is very appreciative of all those that helped to get our resupply to the Cape.

20. In addition to the resupply, Doug Krause brought gifts and mail from family and friends back home. The crew send their thanks to all our friends and family that sent news, cards and gifts and are especially grateful to Doug for carrying all of it in his personal luggage from the USA and making sure it got all the way to the Cape.



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